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# BASELINE MONITORING PILOT – EAST REGION

FINAL REPORT – OCTOBER 2013

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OCTOBER 2013

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# CONTENTS

|   |    |
|---|----|
| CONTENTS.....   | 3  |
| ACRONYM LIST.....   | 4  |
| LIST OF TABLES AND FIGURES.....   | 6  |
| EXECUTIVE SUMMARY .....   | 7  |
| INTRODUCTION.....   | 8  |
| Description of the Project Evaluated .....  | 8  |
| Purpose of the Baseline Study and Evaluation Questions.....   | 8  |
| Brief Statement on Methods .....  | 8  |
| RESULTS.....  | 9  |
| Demographic Characteristics of Farming Households .....   | 10 |
| Farm Characteristics.....   | 11 |
| Access to Irrigation.....   | 11 |
| Farming Household's Agricultural and Livestock Production and Income.....   | 13 |
| Cereal crops.....   | 13 |
| Vegetable crops.....  | 13 |
| Legume crops.....   | 14 |
| Fruit crops .....   | 14 |
| Forage crops.....   | 14 |
| Sapling nurseries.....  | 14 |
| Poppy .....   | 14 |
| Livestock.....  | 15 |
| By-product Produce .....  | 16 |
| Income.....   | 16 |
| Income from Licit Agricultural Activities .....   | 16 |
| Income from Licit Non-agricultural Activities.....  | 17 |
| Post-Harvest Practices and Agricultural Marketing.....  | 18 |
| Agricultural extension services are perceived as virtually non-existent.....  | 21 |
| Agribusiness Input Supplies.....  | 22 |
| Farmer's Associations .....   | 22 |
| Implementing Partners.....  | 22 |
| Role of Women .....   | 22 |
| Farming Household Assets .....  | 25 |
| Views of the Government's Agricultural Policies and Support.....  | 26 |
| FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS.....   | 28 |
| Baseline Value for Household Income in the Eastern Region.....  | 28 |
| Baseline Value for Production of Licit Crops in the Eastern Region in Metric Tons per Hectare.....                    | 29 |
| Baseline Value for Irrigated Hectares in the Eastern Region.....  | 29 |
| Baseline Value for Hectares Under Licit Crop Cultivation in Areas Targeted by USG Programs in the Eastern Region..... | 30 |
| CONCLUSIONS .....   | 30 |
| FEASIBILITY OF STUDY REPLICATION.....   | 33 |

APPENDICES:

- A - Methodology Description
- B - Statement of Work & Modifications
- C - Approved Work Plan
- D - List of Documents Consulted & Referenced
- E - List of Individuals and Agencies Contacted
- F - Survey Instruments and Questionnaires
- G - Team CVs
- H - Survey Questions and Associated Statistical Tables

# ACRONYM LIST

|          |  |
|----------|--|
| ACE      | Agricultural Credit Enhancement program                            |
| ADF      | Agricultural Development Fund                                      |
| BRAC     | Bangladesh Rural Advancement Committee                             |
| CSO      | Afghanistan Central Statistics Organization                        |
| DAIL     | Directorate of Agriculture, Irrigation and Livestock               |
| FAO      | Food and Agriculture Organization of the United Nations            |
| FGD      | Focus Group Discussion   |
| GIRoA    | Government of the Islamic Republic of Afghanistan                  |
| IDEA-NEW | Incentives Driving Economic Alternatives for the North, East, West |
| IDS      | IDS International Government Services, LLC                         |
| IP       | Implementing Partner   |
| MAIL     | Afghanistan Ministry of Agriculture, Irrigation and Livestock      |
| MRRD     | Afghanistan Ministry of Rural Rehabilitation and Development       |
| NGO      | Non-Governmental Organization                                      |
| OAG      | USAID/Afghanistan Office of Agriculture                            |
| UNODC    | United Nations Office on Drugs and Crime                           |
| USAID    | United States Agency for International Development                 |
| USG      | United States Government   |

# LIST OF TABLES AND FIGURES

|  |    |
|--|----|
| TABLE 1: HOUSEHOLD SIZE BY PROVINCE .....  | 10 |
| TABLE 2: TYPE OF AGRICULTURAL HOUSEHOLD.....   | 11 |
| TABLE 3: HAVE YOU EVER GROWN POPPY?.....   | 14 |
| TABLE 4:ANIMAL OWNERSHIP: MEAN PER HOUSEHOLD BY PROVINCE AND ANIMAL .  | 15 |
| TABLE 5: AVAILABLE STORAGE STRUCTURES ON FARM .....  | 18 |
| TABLE 6: HOW DO YOU ASSESS THE MARKET? .....   | 19 |
| TABLE 7: IS THERE ANY ORGANIZATION OR INSTITUTION WHICH PROVIDES FARMERS<br>IN YOUR AREA WITH LOANS TO BE USED IN AGRICULTURE? (Total all provinces) | 20 |
| TABLE 8: HOUSEHOLD TASK DISTRIBUTION.....  | 24 |
| TABLE 9: BASELINE VALUE FOR HOUSEHOLD INCOME .....   | 28 |
| TABLE 10: BASELINE VALUE FOR PRODUCTION OF LICIT CROPS IN THE EASTERN<br>REGION .....  | 29 |
| TABLE 11: BASELINE VALUE FOR IRRIGATED HECTARES IN THE EASTERN REGION.....   | 29 |
| TABLE 12: BASELINE VALUE FOR HECTARES UNDER LICIT CROP CULTIVATION IN<br>TARGETED AREAS - EASTERN REGION.....  | 30 |
| Figure 1 Age of heads of household among male respondents.....   | 10 |
| Figure 2 Percent irrigated land by system.....   | 12 |
| Figure 3: Was household income in 1391 (2012) higher, the same, or lower? .....  | 16 |
| Figure 4 Sources of income (mean values).....  | 18 |
| Figure 5: Did you get agricultural extension services in your village in the past 12 months? .....   | 21 |
| Figure 6: Has the project improved agriculture and livestock rearing in your area?.....  | 21 |
| Figure 7: Household monetary decisions .....   | 25 |

# EXECUTIVE SUMMARY

**The mean annual income of a household in the Eastern Region is 112,472.82 AFN (US\$2,013.48).** Given the large households in the sample with a mean household size of 14.51 persons, the average income per household member is US\$138.76.

**Vegetables (5.75mt/ha) followed by cereals (4.17mt/ha) provide the highest yields in metric tons per hectare of the crops included in this survey.** These two crops have substantially larger yields than other crop categories and should be seen as central to what is essentially a subsistence-based agricultural economy.

**Income is largely dependent on non-agricultural salaried positions.** These are often with international organizations, funding for which is set to be reduced drastically in the coming years due to the international withdrawal, further impacting the already low resilience of these households.

**Out of a mean irrigated area of 1.4 hectares per household, 12% (0.4ha) consists of improved irrigation.** Water shortages and lack of effective irrigation are considered the major challenges for farmers in Region East.

**The mean hectare under cultivation with licit crops by households in the Eastern Region USG project areas is 1.9ha.** While some households have the same mean cultivated area, more intense use of the land means an aggregate area of 4.15ha counting all crop rotations. It would seem likely that this hard use also depletes the yield as the land becomes overused given the reported shortages of fertilizers.

**A majority (84.1%) of farmers are landholders but plots are usually small.** This is consistent with the common pattern in Afghanistan but also reinforces the subsistence nature of agricultural households. Land is a divisive and contentious issue in Afghanistan and land-grabs by local power-holders are fairly common in the Eastern Region.

**Cereal crops are the staple crop while vegetables and fruit offer more options for marketing.** Production is nevertheless dominated by household consumption and focus group discussion participants state they only sell when they have excess crops.

**Women are largely confined to domestic production, including dairy products, poultry keeping, and similar tasks.** While some exceptions do occur, this is a reflection of the prevailing social attitudes and concerns in much of rural Afghanistan.

**Respondents perceive government support as largely absent and a vast majority claims to not have received extension services in the last 12 months.** This may warrant further investigation to determine the cause, effects, and possible mitigation of this problem.

# INTRODUCTION

## Description of the Project Evaluated

In March 2011, the U.S. Government (USG) finalized an Agricultural Assistance to Afghanistan Strategy that guides the overall USG strategy in Afghanistan to support a sustainable thriving licit economy. In response to this USG-wide approach, USAID developed its own strategy and program portfolio with three goals: (1) Increase Agricultural Productivity and Food Security, (2) Regenerate Agribusinesses, and (3) Improve Irrigation Infrastructure and Rehabilitate Watersheds.

## Purpose of the Baseline Study and Evaluation Questions

The aim of the Baseline Monitoring- East Region pilot study is to obtain baseline data for several key performance indicators that can be used to calculate out-year targets for USAID/Afghanistan Office of Agriculture (OAG) Agricultural Assistance programming initiatives and activities. To facilitate performance management the study provides baseline values on four primary evaluation questions; income, agricultural production, amount of land under irrigated cultivation and the amount of land producing licit crops. In addition to estimating the baseline values, this report considers the feasibility of replicating the study in other regions, whether as independent efforts or incorporated into a third-party monitoring program.

## Brief Statement on Methods

This report combines primary qualitative and quantitative data collection with reviews of secondary data, supporting analysis to produce estimates of baseline indicators for the east region of Afghanistan. Primary data was collected in five provinces (Ghazni, Laghman, Nangarhar, Parwan, and Wardak), through household surveys, focus groups and in-depth interview discussions. This primary data was integrated with secondary data to produce estimates of baseline values for selected indicators for the region, along with discussion of some of the underlying data.

Survey respondents were from farming households in 136 villages in 52 districts in the five provinces. Before being administered to the respondents, the survey instrument (written in English) was translated into Dari and Pashto, then back-translated into English to verify that meaning was preserved in translation. The survey was field tested for usability. Data are reported in each province, and in the aggregate..

Male and female respondents were initially surveyed together in a strongly male-dominated context. Subsequently, a separate survey was conducted with a somewhat different range of questions to specifically engage female respondents. The total number of respondents in the original household survey was 1360. The total number of respondents in the second survey (females) was 1361. Participants in the focus group discussions (FGDs) and in-depth interviews were stakeholders including farmers, implementing partners (IPs), agricultural credit providers, and agribusiness wholesale and retail entities.



# RESULTS

Agriculture in Afghanistan as a whole occupies more than half of the population with even more owning some type of livestock.<sup>i</sup> A majority of farmers grow annual crops on irrigated small plots. The subsistence-oriented agriculture practices can be seen as a reflection of the many years of war and instability. While market conditions have improved, many have not switched from staple production for domestic consumption to crops that are better from a market perspective.<sup>ii</sup>

However, this may also be a reflection of the vulnerable nature of Afghan agriculture and the very large variations in crops resulting from a high dependence on often very fickle weather and exposure to both natural and human induced hazards. According to the respondents in this study, droughts and floods in recent years have negatively impacted yields. Water shortages, in particular, have a heavy impact on Afghan annual yields.<sup>iii</sup>

The estimates of the Afghan agricultural contribution to GDP vary widely. According to the World Bank, the agriculture sector contributes around half of the country's GDP<sup>iv</sup> and contributes around 25-30% of the annual GDP growth rate depending on outputs.<sup>v</sup> However, the Afghan Central Statistics Office states in their 2010-11 report that agriculture contributes only 26.74% of GDP<sup>vi</sup> and the CIA World Factbook in turn rates the contribution to GDP as low as 20%.<sup>vii</sup> However, recovering from the 2011 drought, agriculture drove much of the Afghan GDP growth in 2012/13.<sup>viii</sup> The sector's vulnerability, nevertheless, also means it cannot be relied on for economic stability or production under current conditions.

Aid flow feeding private consumption was still the main driver for GDP growth.<sup>ix</sup> With aid flows into the economy set to decrease as the international presence draws down, agriculture will become a substantially more important part of the GDP than it already is, and fluctuations in agriculture production will impact the economy more severely as the sector takes on an even more central role.

The overall most concerning result from the study was that the overwhelming majority of respondents, both in interviews and the survey material, claimed little to no public sector support or programming existed in their specific areas. This perception was wide-spread and expressed in various ways in the interviews. Research between 2006 and 2012 has shown that local dynamics often results in projects being coopted into local structures of dominance and power.<sup>x</sup>

Common examples include making a profit from selling diverted resources in other markets or allocating resources in return for political support from a narrow support group, rather than intended beneficiaries of assistance. There is no broad consensus that this results in any 'trickle down' or 'ripple effect' with the local community. Whether the perceptions of government support are substantiated or the result of a communications issue, needs further investigation.

The results presented in this report are the foundations for the baseline values that address the primary research questions detailed in the conclusion section. Where appropriate, the report provides supplementary content relevant to these baseline values in order to provide greater context. In addition to the core baseline values, several additional values are offered in the concluding section with a justification for their inclusion.

## Demographic Characteristics of Farming Households

Respondents reported relatively large household sizes, as shown in Table I.

As the FAO noted in a 2003 report, “Households in rural Afghanistan often consist of an extended family where several generations share the same dwelling.”<sup>xi</sup> This, combined with high fertility rates, results in large households. The high fertility rate also produces families that are young as well as large. The smallest household reported one member, while the largest household, by a significant margin, had 85 members. Approximately 40% of households across the provinces had between 8-12 members.

| TABLE I: HOUSEHOLD SIZE BY PROVINCE |                  |                |                  |
|-------------------------------------|------------------|----------------|------------------|
| Province                            | Total HH Members | Males Aged 16+ | Females Aged 16+ |
| Laghman                             | 13.25            | 3.80           | 3.48             |
| Parwan                              | 10.44            | 3.10           | 2.74             |
| Wardak                              | 15.70            | 5.07           | 4.12             |
| Ghazni                              | 14.57            | 4.89           | 3.76             |
| Nangarhar                           | 17.06            | 4.83           | 4.12             |
| Mean of total                       | 14.51            | 4.43           | 3.70             |

This can be compared to the 2007-8 National Risk and Vulnerability assessment that stated a national average household size of 8.0 in poor households and 6.9 in non-poor households.<sup>xii</sup> However, the average household size varied significantly. The largest households were found in Nangarhar with an average of 17.06 members. This was followed by Wardak at 15.7, Ghazni at 14.57, and Laghman at 13.25. Parwan on the other hand had an average household size of 10.4. An overwhelming majority (98%) of respondent households were headed by men, a number that is consistent with the 2007/8 national risk and vulnerability assessment. This is unsurprising given the strong patriarchal and male-dominated nature of Afghan society.

Across the study area, almost half the household members were 15 years or younger. Most heads of households included in the survey were 45-54 years old (28%) followed by 55-64 (24%) and 35-44 (20%).

The reported literacy levels among the male respondents are in line with the national estimates. According to the Afghan Ministry of Education the adult literacy rate among males is around 50% and 18% among women for an average of 34%.<sup>xiii</sup> Reported literacy rates among male respondents reflect this very closely with minimal deviation between provinces. Some 52.3% of male respondents reported being able to read a letter with the highest percentage in Nangarhar (56.2%) and the lowest in Parwan (46.3%). Another 49.8% reported being able to write a letter with Parwan again reporting

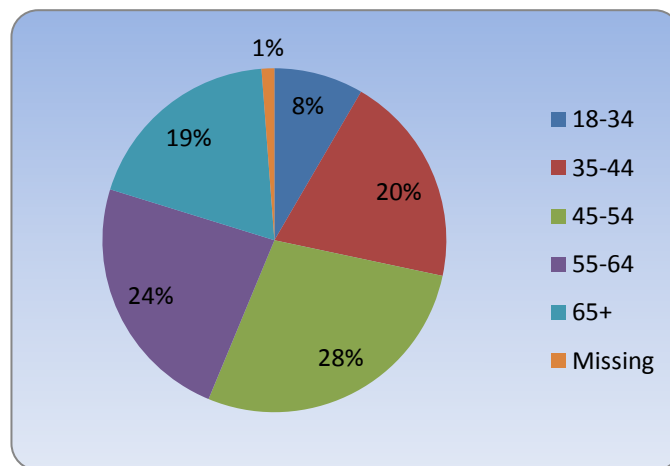


Figure I Age of heads of household among male respondents

the lowest percentage (45.5%) and Laghman this time reporting the highest (52.2%). Finally, while 53.6% overall claimed to be able to read a book, Nangarhar again was on top with 56.9% and Parwan at the bottom with 47.6%).

## Farm Characteristics

An overall majority (82.7%) of respondent farmers in the five provinces were landowners. The highest percentage was found in Parwan where 90.9% owned the land they farm, closely followed by Wardak (88.8%), Ghazni (86.4%), and Nangarhar (80.3%). Laghman showed the lowest percentage with only 65.2% owning the land they farmed.

The average size of land cultivated varied slightly among the five provinces with the largest areas in Wardak and the smallest in Ghazni. In Wardak, farmers reported cultivating 11.8 jeribs (2.4ha) per household and in Nangarhar they reported cultivating 11.1 jeribs (2.2ha) per household in 1391 (2012). In Parwan and Laghman the reported areas were smaller with 9.4 jeribs (1.9ha) and 9 jeribs (1.8ha) respectively. Farmers in Ghazni reported by far the smallest area cultivated during the previous year with only 6.4 jeribs (1.3ha) per household.

Female land owners, counting both joint and sole ownership, were most common in Laghman (31.6%) and the least in Wardak (2.1%) and Ghazni (3.3%). A majority of the respondents owned between one beswa (approximately 97.68 square meters) and half a jerib (one Afghan jerib is 0.2 hectare). The notable exception here was Parwan where 46.9% of the women that owned land reported owning one half to one jerib of land, jointly or separately. Female sole ownership of cattle was most common in Laghman (73.3%) and Parwan (53%), followed by Nangarhar (22.1%) (See also Table 37 in Appendix H).

| <b>TABLE 2: TYPE OF AGRICULTURAL HOUSEHOLD</b>         |          |
|--|----------|
| <i>Out of 1337 households (Value missing for 1.7%)</i> | <b>%</b> |
| Cultivating Own Land (Landowner)                       | 84.1     |
| Cultivating Someone Else's Land (Sharecropper)         | 8.90     |
| Leaseholder (Who Has Leased the Land)                  | 5.90     |
| Has Acquired the Land Through Mortgage (Gerawi)        | 1.10     |
| Total  | 98.30    |

For any grain type, the average area cultivated by a household was typically less than five hectares, and often less than one hectare.

## Access to Irrigation

Lack of water was the most common reason given for leaving land uncultivated in the survey. This was particularly true for Wardak and Ghazni. Also farmer FGD respondents in Ghazni, Nangarhar, and Wardak reported that they had left part of their land uncultivated because of water shortages. In addition, the Parwan respondents referred to poor irrigation as a major problem for agriculture in that province, reinforcing the impression that irrigation is a major issue across the region.

Improved irrigation was a rarity among the survey population. In the survey, "improved" referred to any structure in which concrete, masonry or metal was used. <sup>xiv</sup> Traditionally, Afghan irrigation structures are made of mud. Some 80% of the households reported no improved

irrigation structures, another 10% reported no more than one-half hectare with improved irrigation and 95% of respondent households had less than one hectare with improved irrigation. The area under improved irrigation totaled just under 239 hectares, less than 10% of total irrigated land. Of this, the 12 largest landholdings (1.6 Ha and larger) accounted for 52.6 Ha, 22% of the total with improved irrigation.

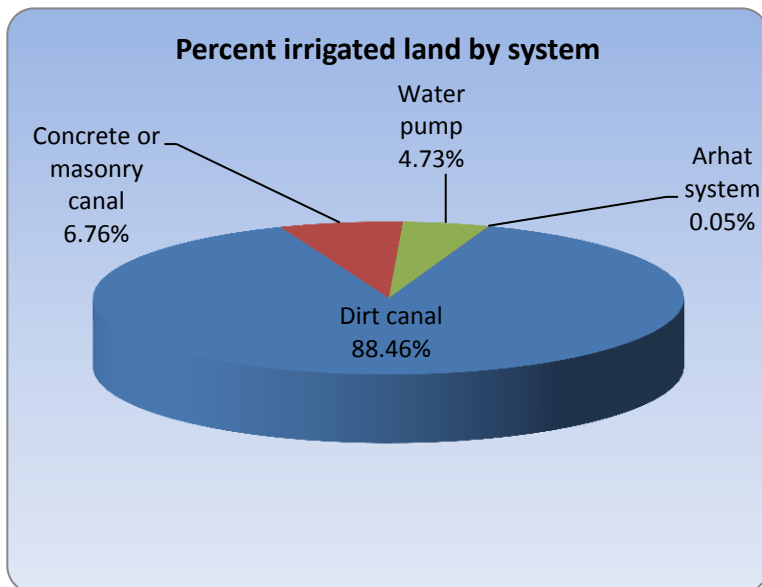
In both survey responses and FGDs, farmers expressed a general concern about water, with Wardak and Ghazni standing out as especially water-deficient. As much as 70% of respondents in Wardak (170 of 240) reported insufficient water, as did 64% (210 of 329) in Ghazni. In these provinces particularly, water shortage was identified as a problem by input supplier and agricultural union FGDs as well as by farmer FGDs.

Particularly in Wardak, FGD participants brought up a perceived need for dams to extend the irrigation season. When asked to identify the three greatest challenges, the most common answers were 'lack of sufficient irrigation water'; lack of proper irrigation system; and drought. In Laghman (94%) and Parwan (89.65%), the river is overwhelmingly the primary source of irrigation. In Nangarhar, the river is also the number one source but only according to 60.44% of the respondents. Karezes (15.36%) and springs (8.26%) supplement the natural river flow in these areas. In Ghazni (60.61%) the karezes are the primary source of irrigation while respondents in Wardak (51.47%) rely mainly on springs.

By comparison, the Ministry of Energy and Water numbers indicate that, in 2007, rivers were by far the largest irrigation source (84.6%) ,followed by springs (7.9%), karezes' (7%), and arhats (dug wells) (0.5%).<sup>xv</sup>

Out of the five provinces sampled, improved irrigation is only common in Parwan. Among respondents in this province, 17% used improved irrigation to irrigate two jeribs of land but the range of responses included up to 35 jeribs.

Only 14.3% of farmers in Parwan did not use improved irrigation at all. The situation is considerably different in the other provinces. In Laghman, 88.1% responded that they did not irrigate a single hectare via improved irrigation. While some individuals did report using improved irrigation (for up to 4 hectares of land), it did not appear to be widely available. The percentage of respondents reporting no hectares fed by improved irrigation was also extremely high in Ghazni (93.9%), Nangarhar (94.9%), and Wardak (95.8%).



**Figure 2 Percent irrigated land by system**

## **Farming Household's Agricultural and Livestock Production and Income**

Much of Afghan agriculture is subsistence in nature, but the types of crops grown vary between the provinces. The interviewed farmers noted that they only sell when there is a surplus in their harvest but for many crops that is never an option. Wheat is a common crop in Ghazni, Laghman, and Nangarhar, as are various vegetables. Vegetables are also considered the most profitable crop by interview respondents in Ghazni and Nangarhar.

### **Cereal crops**

The importance of cereal grains in Afghanistan agriculture is widely recognized, accounting for 77% of agricultural GDP in 2010/11. The role of cereal grains is no less important in the Eastern Region. Grain yields per hectare reported in this survey are shown in the mean yields cereals Table 13 in Appendix H with detail for yields by province, and for areas identified as USAID project areas and those without USAID agriculture project.

The Afghan CSO reports that rain fed wheat yield dropped in the 2011-2012 production year as a result of the weather and climate conditions experienced in the country.<sup>xvi</sup> However, the conditions were favorable for irrigated wheat. The total yield for Afghanistan in 2011-2012 is estimated at 3.4 million metric tons. This was preceded in 2010-2011 by a total harvest of 5.1 million metric tons.<sup>xvii</sup> This fluctuation from year to year underscores the importance of appropriate irrigation mechanisms to generate increased food security, resilience, and sustainability. There is variation in wheat yields between provinces (see also Table 13 in Appendix H).

### **Vegetable crops**

According to the Afghan Central Statistics Office (CSO), irrigated land is generally not used for large-scale cultivation of vegetables in the Eastern Region. The farmer FGDs described growing vegetables in part for domestic consumption and in part for the market with potatoes, onions, and tomatoes among the more frequently mentioned for the market sales. The dual role of vegetables in what is predominantly a subsistence agricultural economy is substantiated by the CSO annual statistics report for 2012.<sup>xviii</sup> The variation in crops and yields is quite extensive.

### **Industrial and Oil Seed crops**

With the exception of cotton, industrial and oil seed crops are generally not cultivated extensively on irrigated land in Afghanistan as a whole, and are grown much less frequently than cereal or vegetable crops. This partly reflects the low-priority of cotton as a crop in the Eastern Region. The most prevalent oilseed crop is cotton which was reported as present in all provinces except Wardak, providing a yield of 1-3.7mt/ha. However, while some areas in southern Afghanistan do have cotton production, the farmer FGDs within the scope of this project did not indicate cotton to be a central crop but rather cultivated only for limited domestic needs. Sugar beet is most common in Wardak and is also, but to a much lesser extent, grown in Parwan and Ghazni. Sugar cane was only reported in two provinces.

## Legume crops

Legume crops are also relatively uncommon in irrigated areas. The exceptions are all in project areas with for example peas being cultivated on irrigated land in Wardak (mean 3ha per household) and Ghazni (mean 3.1ha). In Laghman, both Mung beans (mean 2.2ha) and peanuts (mean 2.6ha) are grown in irrigated areas. It would seem likely that the Mung bean cultivation could at least in part be connected with the IDEA-NEW Mung bean program launched in 2009.<sup>xix</sup> Legume crops yields are overall not very high as measured in mt/ha and there is very little variation between provinces in term of peas, which is the most common legume crop.

## Fruit crops

Fruit is another crop with some variation between the different parts of the Eastern Region but the three most recurring crops are grapes, apples, and mulberries. Fruit orchards are important in the Eastern Region and farmer FGDs referred to several types of fruit as profitable crops. This is also in line with the answers given by the farmer FGDs. The CSO annual statistics describe these crops and more as the core of traditional valley-oasis agricultural structures. The CSO goes on to report that most households keep some form of fruit trees for domestic consumption.<sup>xx</sup> Fruit is cultivated on irrigated land with no rainfed cultivation reported at all. Among the households that reported cultivating fruit, the mean area per household is smaller than 0.5ha for most crops (The means for fruit cultivation are calculated between the households that indicated they grew a specific crop. This does not compare to the total survey means for cultivated land and irrigated land totals). The one clear exception is persimmon, showing high means in Wardak (mean 26.7ha per household), Ghazni (mean 13.9ha), and to a smaller extent in Nangarhar (mean 4.8ha).

## Forage crops

Forage crops, alfalfa and clover, are also generally grown in only small volumes on irrigated land. The mean areas reported by the respondents are all 0.4ha or less, with the exception of clover cultivation in Ghazni (mean 0.8ha).

## Sapling nurseries

Sapling nurseries are not present, according to respondents in all provinces except Parwan. However, the farmers in the focus groups there report that while there are nurseries, they do not distribute or allow access to the local population.

## Poppy

When asked whether they cultivate poppy, a large majority of the male survey respondents, said no (1031) while less than a quarter of that said yes (236). However, refusal to reply was also quite common, with 63 respondents refusing to give an answer, 34

| <b>TABLE 3: HAVE YOU EVER GROWN POPPY?</b> |            |           |                           |                |
|--|------------|-----------|---------------------------|----------------|
|  | <b>Yes</b> | <b>No</b> | <b>Response Undefined</b> | <b>Refused</b> |
| <b>Laghman</b>                             | 8          | 197       | 4                         | 0              |
| <b>Parwan</b>                              | 9          | 193       | 5                         | 19             |
| <b>Wardak</b>                              | 5          | 218       | 5                         | 10             |
| <b>Ghazni</b>                              | 11         | 281       | 2                         | 34             |
| <b>Nangarhar</b>                           | 203        | 142       | 4                         | 0              |
| <b>Total</b>                               | 236        | 1031      | 20                        | 63             |

of which were in Ghazni province and 19 in Parwan. Poppy of course remains a large problem in Afghanistan and the UNODC is forecasting an increase in production in most regions in 2013.<sup>xxi</sup> In this context, it is significant that water issues were such a prevalent complaint among respondents. Poppy is a less water-intensive crop and as ISAF draws down and the government becomes more focused on trying to keep the insurgency at bay, poppy may creep back in as a preferred crop among farmers. The stated main reasons for taking up poppy cultivation are, according to respondents in the UNODC survey, primarily high opium prices, followed by a lack of support from the government for alternative crops. Again, the responses in the present survey, which reflect disillusionment and a perceived lack of government support, raise concerns that these factors will also serve to increase poppy cultivation in the Eastern Region.

According to the UNODC, cash advances (credit) have already been extended by poppy traders while agricultural support to licit crops has failed to materialize. The current fear of eradication and respect for the government ban is unlikely to continue to stave off increased cultivation, especially in the east and south of the country.

For the Eastern Region, Laghman (previously declared poppy free) is one of the provinces likely to see resurgence in poppy cultivation. In a sad irony, the improved techniques of farming brought through development projects such as improved pesticides, solar power, and other technology, may aid poppy in its return as a major livelihood crop in Afghanistan.<sup>xxii</sup> Nangarhar has for example seen increasing poppy cultivation after a period of relatively low production.<sup>xxiii</sup>

## Livestock

As can be seen in Table 4, Wardak and Ghazni tend to stand out in terms of mean values for animal ownership. While Parwan has the highest mean value for dairy cows, Ghazni and Wardak are very dominant in terms of especially buffalo, sheep, and goats. It should be noted that the *Keekar* is a bird similar to but considered separate from normal hens and roosters.

Fish cultivation is extremely under-developed in the targeted areas and income from fisheries is highly uncommon among respondents. In the wider survey, only one household, in a project area in Nangarhar, reported selling fish, giving an average of 400 fish per month and an income from fish of 28,000 AFN.

In most cases, farmer respondents reported no bee farms or fish farms. In Nangarhar, respondents reported that 5-6 fish farms have been started but that they have been closed down again as a result of the water shortage. Likewise, in Parwan, a respondent mentioned a fish farm that did not yet have any fish. In Nangarhar, respondents believed

**TABLE 4: ANIMAL OWNERSHIP: MEAN PER HOUSEHOLD BY PROVINCE AND ANIMAL**

|                  | Dairy cow | Buffalo | Sheep |
|------------------|-----------|---------|-------|
| <b>Laghman</b>   | 2.12      | 1.17    | 4.37  |
| <b>Parwan</b>    | 4.33      | 2.00    | 4.95  |
| <b>Wardak</b>    | 1.35      | 6.57    | 7.35  |
| <b>Ghazni</b>    | 1.66      | 12.18   | 14.06 |
| <b>Nangarhar</b> | 2.03      | .47     | 1.63  |
|                  |           |         |       |
|                  | Goat      | Turkey  | Duck  |
| <b>Laghman</b>   | 4.38      | 2.54    | 3.37  |
| <b>Parwan</b>    | 4.23      | 0       | 3.00  |
| <b>Wardak</b>    | 7.00      | 4.00    | 0     |
| <b>Ghazni</b>    | 9.76      | 4.00    | 0     |
| <b>Nangarhar</b> | 2.43      | 2.13    | 4.07  |
|                  |           |         |       |
|                  | Keekar    | Mule    | Horse |
| <b>Laghman</b>   | .33       | .17     | .09   |
| <b>Parwan</b>    | 0         | 0       | 0     |
| <b>Wardak</b>    | 0         | .50     | .00   |
| <b>Ghazni</b>    | 0         | 0       | 0     |
| <b>Nangarhar</b> | 1.60      | .00     | .11   |

there may be one bee farm at the district level while respondents in Parwan thought there might be 5-6 at the district level. Notably, the farmers in Wardak reported bee keeping as a common practice at household level with around 4-6 bee hives per household. The small size suggests production exclusively for domestic consumption which would explain why Wardak records no income from honey.

## By-product Produce

In addition to the more central agricultural activities, the respondents report producing a range of byproducts (see Table 19 in Appendix H). A surprising result is the reported zero production of honey in Wardak, given that the farmer FGDs estimated that many households have 4-6 hives (“boxes”), but this may mean it is strictly for domestic production.<sup>xxiv</sup> Another notable result is the low reported production levels of most byproducts in Parwan in this survey, a fact that has no clear explanation. According to the CSO annual report, livestock byproducts are a main source of income for farmers, but the FGDs did not substantiate that directly.

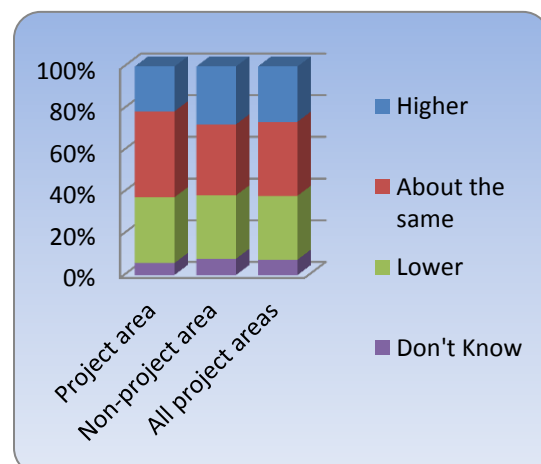
## Income

Across the five provinces, 19.1% of households have three family members working on the farm, 32.6% of households have two family members working on the farm, and 22.6% of households have only one working on the farm. Among the respondent households, 45.1% stated that no family member worked off the farm, while 26.2% said one did, and 16.5% said two family members worked off the farm. Having a family member working outside Afghanistan was even more uncommon, with 90.4% responding that no family members did. This was the most prevalent in Nangarhar (96.9% say no) and Laghman (92.4% say no).

### Income from licit agricultural activities

Income of fruit-producing households compares favorably to all crop-producing households. For all 899 households that reported crop income, the average income from cereal crops was 24,836 AFN. For the 128 households that reported income from grapes, the mean household income from grapes was more than double that, 52,678 AFN. The 24 households with income from apples (19 of the households were in Wardak) reported an even higher average, 59,120 AFN. The six households, all in Ghazni, reporting income from Aloo Plums averaged 165,593 AFN (see also Table 18 in Appendix H).

Farm-derived income is low overall and typical respondent households produce agricultural products primarily for household use, with product sale being a small portion of the household production. Of the 1151 households with any reported income, slightly more than half derived all their income from farm activities. That is, 551 (47.9% of 1151) reported some non-farm income, while the other 600 households (52.1%) had no non-farm income.



**Figure 3: Was household income in 1391 (2012) higher, the same, or lower?**



For the survey sample, the reported average income (in AFN), by source, per household and along with average household (HH) size, can be found in Table 2I of Appendix H. The mean shown in each cell of the table is the mean for respondents in that category. That is, HH size is the mean for all respondents in each geographic area, Crop Income is the mean for all respondent households reporting crop income, and Non-Farm Income is the mean for all (but only) households reporting non-farm income. Thus, for example, the mean for 'income all sources' is the mean for households reporting any income. It is not the sum of the means for each income source category.

The mean of non-farm income is, in every geographic sub-area as well as for the sample as a whole, higher than the mean household income for all households reporting income. In the male survey, households reported an impressively high portion of production of each product that is retained for household use. Details, by agricultural product and province are shown in Table 2I of Appendix H. The few cases with no retention for household use stand out as anomalies, as do the slightly more numerous instances with retention rates below 50%.

The instances in which all the production is retained are far more numerous, and are scattered across all product classes: grains, vegetables, forage, fruit and by-products. This finding is consistent with FGDs. When asked about markets for their products, discussants often reported that they were not regular market participants, producing primarily for their household. The infrequent market sales emerged as part of a network of related features constraining livelihood improvement.

### **Income from Licit Non-agricultural Activities**

Within the households with non-farm income, over one-third (229 of 648) included individuals with salaried positions, the most-frequently identified source of non-farm income.<sup>xxv</sup> Salaried positions will typically have relatively high incomes, contributing to the income disparity between households with non-farm income and those without.

According to the female respondents, other income-earning activities include a number of different options. In Laghman 61.8% (21 individuals) mentioned teaching as a means of supplemental income.

In Nangarhar, 12% mentioned selling eggs as a source of supplemental income but in Parwan 66.7% report not knowing of any other jobs for women. Dairy products (18%) and hens (52%) were only mentioned in Nangarhar, somewhat surprising given that the men responded very differently. There is no immediate explanation for this discrepancy. In Wardak (87.3%) and Ghazni (63.9%) of women refused to answer.

As can be seen in figure 4, non-farm income is substantially higher than the farm activities put together. It is notable that, the dominant part of respondents' income appears to be from NGOs, the government, and other similar organizations. While this is a source of income now, the ongoing transition process and the expected heavy reductions in funding are likely to have a great impact on the food security of rural populations. This will especially be the case if farming activities also suffer from droughts, floods, and general shortages of necessary agricultural inputs.

Alternative vocational training programs have been implemented across the country, not the least in the Eastern Region, and could be expected to mitigate these challenges. However, a shift away from the current income structures would likely come on the heels of a major natural hazard impact. This would drive a large number of households to explore and likely compete for alternative livelihoods for supplemental income.

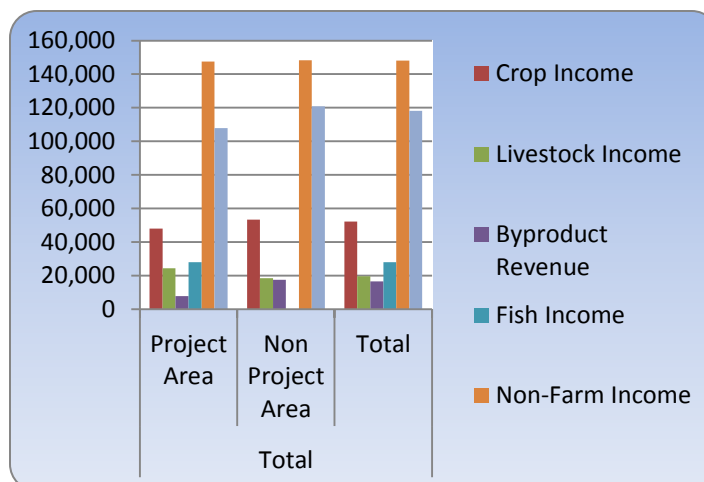


Figure 4 Sources of income (mean values)

During a major drought in Faryab province in northern Afghanistan, for instance, women turned to carpet weaving to supplement the household income. Because of the sheer number of new carpet producers, the price dropped dramatically.<sup>xxvi</sup> It could be expected that mass-training programs of for example seamstresses or other roles could potentially have the same outcome in a time of crisis for the households.

## Post-Harvest Practices and Agricultural Marketing

Extremely few respondents report access to a modern electricity-powered cold storage facility. Instead, a mud shed is by far the most common storage method as can be seen in Table 5 below. The lack of proper cold storage was an issue raised by farmers as well as association representatives, and agricultural input providers.

| TABLE 5: AVAILABLE STORAGE STRUCTURES ON FARM |            |                                   |                                   |                                    |  |           |
|---|------------|-----------------------------------|-----------------------------------|------------------------------------|--|-----------|
| Province                                      | Mud shed   | Structure in baked brick/concrete | A makeshift structure for storage | Traditional cold storage structure | Modern electricity-powered cold storage facility | Refused   |
| Laghman                                       | 193        | 2                                 | 8                                 | 3                                  | 3  | 5         |
| Parwan  | 56         | 1                                 | 4                                 | 1                                  | 1  | 40        |
| Wardak  | 56         | 1                                 | 5                                 | 26                                 | 3  | 26        |
| Ghazni  | 33         | 3                                 | 39                                | 1                                  | 0  | 21        |
| Nangarhar                                     | 273        | 4                                 | 5                                 | 0                                  | 0  | 4         |
| <b>Total</b>                                  | <b>601</b> | <b>11</b>                         | <b>61</b>                         | <b>31</b>                          | <b>7</b>   | <b>96</b> |

A very common complaint among interview respondents was a lack of markets. According to the female respondents, most products are sold to neighbors. This is most common in Parwan (45.9%) followed by Wardak (42.6%). In Laghman most products are instead sold in the village market (55.1%), an also fairly common marketing route in Wardak (44.2%) and Nangarhar

(43.6%). District markets only have a relatively large role in Nangarhar where 25.1% reported marketing their produce there. The provincial market is the primary market in Ghazni (64.3%) and plays a relatively large role in Parwan (23.6%).

The female survey respondents' view of the market demand (see Table 6 below) should perhaps be seen in the light of these relatively small outlets being dominant but also against the reported low yields in the concerned provinces.

| <b>TABLE 6: HOW DO YOU ASSESS THE MARKET?</b> |         |        |        |        |           |       |
|---|---------|--------|--------|--------|-----------|-------|
|   | Laghman | Parwan | Wardak | Ghazni | Nangarhar | Total |
| Very good                                     | 36.3%   | 16.1%  | 3.0%   | 1.2%   | 15.9%     | 13.2% |
| Good  | 38.0%   | 32.9%  | 48.5%  | 34.7%  | 56.8%     | 42.7% |
| Medium  | 25.1%   | 45.0%  | 17.7%  | 40.5%  | 26.0%     | 30.7% |
| Poor  | 0.6%    | 6.0%   | 24.7%  | 13.9%  | 1.3%      | 9.7%  |
| Don't know                                    | 0.0%    | 0.0%   | 1.0%   | 6.2%   | 0.0%      | 1.8%  |
| Refused                                       | 0.0%    | 0.0%   | 5.1%   | 3.5%   | 0.0%      | 1.9%  |

Farmers in Region East do not produce much surplus for sale and predominantly sell it wholesale and retail to local markets or neighbors. A few respondents however reported transporting their produce at great cost to larger markets in the cities. In that context, demand can be seen as good when what little there is to sell can be sold, but it does not necessarily indicate a strong market with the purchasing power to absorb significantly increased production volumes. This is something that should be looked into more carefully. The question of what the biggest hurdle is to expanding the family business was seemingly sensitive. Only in Laghman did female respondents give detailed answers, with 30.4% citing security issues and 20.9% citing economic problems. In Parwan, 10.4% of women cited economic problems and 31.3% cited poverty, while 4.9% cited lack of money. It is notable that in Wardak (55.7%) refused to answer and in Ghazni 22.2% also declined to respond. Across the provinces, many women report that there are no obstacles to expansion but the numbers, Laghman (39.3%), Parwan (22.9%), Wardak (33.5%), Ghazni (44.4%), and Nangarhar (44.4%). are not in line with the reported low yields and require closer scrutiny.

## Access to Credit and Agricultural Extension Services

Interviews were undertaken with individual credit providers in all provinces except Ghazni. Traditional banks and lending institutions have been reluctant to engage in the agricultural sector according to USAID, prompting the implementation of the Agricultural Credit Enhancement (ACE) program through the Agricultural Development Fund.<sup>xxvii</sup> ACE was launched in 2010<sup>xxviii</sup> and has been able to establish at least some support for locally based credit providers.<sup>xxix</sup> However, despite the availability, a vast majority of survey respondents were not aware of credit-providing organizations in their area.

Loans from relatives and acquaintances are the most common sources of credit among respondents, with 88.4% obtaining loans from this source. The second most common source, NGOs and micro finance institutions, are a distant second (6.9%). Only 1.4% of all respondents reported being aware of organizations or institutions in the area that provide agricultural loans. This appears to be inconsistent with the assertion of several interviewed credit providers that

their customer base has increased dramatically from the previous year. However, as these credit providers are small vendors with a limited operational area, it may also be that they are too small or that people simply do not perceive them as linked to an institution or organisation. The most common type of loan for agricultural purposes was a small loan under 25,000 AFN (approximately 450 USD). Of 189 reported loans, only eight were signed for by a female in the household.

**TABLE 7: IS THERE ANY ORGANIZATION OR INSTITUTION WHICH PROVIDES FARMERS IN YOUR AREA WITH LOANS TO BE USED IN AGRICULTURE? (Total all provinces)**

|                    | Women  | Men    |
|--------------------|--------|--------|
| Yes, there is.     | 16.9%  | 1.4%   |
| No there is not.   | 80.0%  | 94.3%  |
| Not sure           | 0.0%   | 2.4%   |
| Don't Know/Refused | 3.1%   | 2.0%   |
| Total              | 100.0% | 100.0% |

Despite primarily relying on family, respondents report relatively high levels of dissatisfaction, as 53.4% report being either 'very dissatisfied' (29.1%) or 'somewhat dissatisfied' (24.3%) with the terms and conditions of the loans they have taken. Given that the predominant loan form is from non-institutional loan sources, it is unclear whether this applies to credit providers. However, a generally low awareness or access to this service would suggest it does not necessarily apply to official providers.

The interviewed credit providers appear to have a very clear structure for approval and in at least one case also lean towards the too generous side. The borrowed money was predominantly (73% of loan takers) spent on agricultural inputs such as seed, fertilizer, pesticides, and so on. The second most common investment (14.3%) was buying agricultural tools.

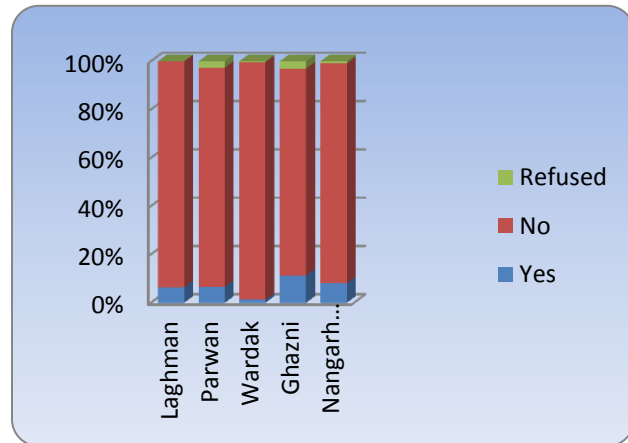
As part of the research, credit providers were interviewed in four of the five provinces. Unfortunately it was not possible to find a credit provider in Ghazni province despite contacting the provincial Department of Agriculture, Irrigation, and Livestock.

All the interviewed credit providers are registered with the authorities and provide direct cash loans or extended credit in the form of non-cash grants. The main clients are farmers and the respondents provide them with improved seeds, equipment, fertilizers, and vaccines. Only the Laghman credit provider explicitly indicated a preference for large landowners as clients. The customer base for the credit providers in Laghman and Parwan has increased dramatically from last year (reportedly 30% and 50-60% respectively). The credit provider in Nangarhar also stressed that people in the very rural areas were unaware of the availability of credit; an assertion that is strongly supported by the survey responses. However, the Parwan respondent stated she no longer has to do marketing, suggesting a widespread knowledge of her services.

Outstanding loans were assessed to be in the range of 1m-2m AFN and the criteria for extending credit were very similar between the areas. There must be faith in the capacity to repay and guarantees are required. Borrowers must have a proper budget; and they must provide the required documentation. Men can get 100-200,000 AFN but women can only get 25,000-75,000 AFN.<sup>xxx</sup> In Parwan and Nangarhar, other credit sources were also present, for example BRAC in Nangarhar. The Wardak respondent states that he has not yet faced an issue with non-payment. He appears to be running his business on a 'needs basis', stating that he has not attempted to collect the outstanding debt because the loan takers still needed the money. He did however state his confidence in being able to collect should the need arise.

## Agricultural extension services are perceived as virtually non-existent

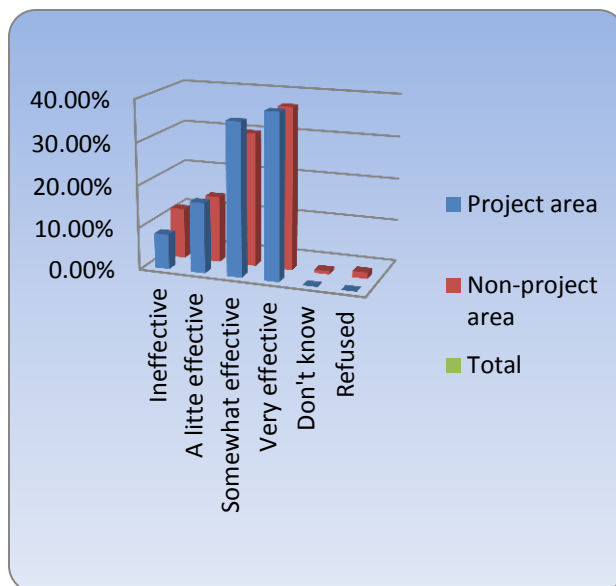
Extension services are not very common and access is very limited. As can be seen in Figure 5, a massive majority of respondents in all provinces report that they have not received any extension services in the past 12 months. Of the total sample, more than 90% report that they did not receive any agriculture extension services in the preceding year. The pattern was consistent across the study area, with similarly large majorities in every sub-area reporting no extension service.



**Figure 5: Did you get agricultural extension services in your village in the past 12 months?**

Agricultural extension services generally receive a high rate of approval with only 3.8% of the intended beneficiaries finding it not useful. Very few households report having had a member participate in agricultural or livestock training over the past 12 months. This applies across provinces with an average of 89.1% reporting they had not received training.

The reported knowledge of agricultural and livestock training is also low. Among the five provinces, Laghman stands out with 45% of respondent households reporting knowledge of a project in the past 12 months. This is far more than in the other provinces, i.e., Nangarhar (14.4%), Wardak (12.6%), Parwan (5.5%), and finally Ghazni (2.2%). Among those who reported that training has been provided, surprisingly large numbers either 'don't know' (30.7% of total) or 'refuse' (34.3% of total) to say what the training focused on.



**Figure 6: Has the project improved agriculture and livestock rearing in your area?**

The primary credit for agricultural and livestock programs was by far given to the national solidarity program (NSP). The Ministry of Rural Rehabilitation and Development (MRRD) was credited as a more distant second option and the PRT's credited as an even more distant third.

In the cases where assistance has been received, it has been perceived as helpful with a majority saying it was 'very' or 'somewhat effective'. However, more extension services were called for in the FGDs with a particular focus on training (See Figure 6).

## **Agribusiness Input Supplies**

The interviewed agribusiness input suppliers are all local and small businesses. They provide predominantly fertilizers (urea and DAP), improved seeds, pesticides, veterinarian vaccines, and machines and pumps for agriculture. They sell both retail and wholesale, and the businesses are not restricted to a province but appear to take advantage of available access routes across district and provincial boundaries. In Laghman, respondents reported that around 70% of the market in the spring is focused on agriculture and 30% on livestock, but that this is reversed in winter, especially when nomadic livestock herders (Kuchi) start migrating through the area. Sourcing is very international with stocks arriving from China, Pakistan, Iran, and to a lesser extent Tajikistan. A major concern for several of the respondents was low quality and fake vaccines coming in to undercut their business. They generally expressed the view that they were not receiving help from the government.

## **Farmer's Associations**

Several farmer associations are available in the surveyed areas. Most of them are relatively small with 6-60 members but with one association in Nangarhar counting 150 members in one area alone (Sharahi area of Rodat district). The general consensus was that the government provides little to no help, though in Parwan, the respondents reported the government is building a much needed cold storage facility. In several areas, help has however been provided by various NGOs.

Women reported low membership but a strong interest in being members of an association. The province with the highest reported female membership in associations was Nangarhar with 5.4% of women reporting they were members of an association while in Parwan it is just 1.3% and less than 1% in the other provinces. However, a majority of women in each province stated that they would like to be members of a farmer's association and mentioned women's self-help groups as examples of such associations. The strongest support for this idea was in Ghazni (74.5%) followed by Wardak (63%), Parwan (62.6%), Nangarhar (62.5%), and finally Laghman (55.2%).

## **Implementing Partners**

Implementing partners interviewed in Laghman reported that several USAID projects had been implemented but that insecurity forced them to cancel activities in Dawlat Shah. The implementing partners identified training as the greatest success and listed the projects' objectives as short-term job creation, poppy replacement in the long term (Nangarhar) and agricultural development. They generally coordinated with the local DAIL but in several provinces they complained about inefficiency or inactivity from the government's side. In Parwan however, the construction of a new cold storage facility was highlighted as a positive development. Insecurity generated by insurgents as well as robbers and local government interference were considered the greatest challenges in all provinces except Parwan, where old techniques and seeds were seen as greater problems. In the Nangarhar focus group, respondents also felt the government sometimes spreads negative rumors about them.

## **Role of women**

The role of women is highly restricted in almost all the areas surveyed. Women are generally confined to activities within the compound, such as tending the cattle, milking, and producing dairy products, tasks through which their market role could potentially be expanded. The

exception to the in-house role is Parwan where the (male) focus group participants report that women also help out in the fields when it comes to weed control and onion crops. Given the prominence of in-house livestock caring, a possible route to increasing women's influence over the long term may be to target them for training in livestock diseases and vaccination.

Poverty is generally the biggest problem in the *mantqa* (area or district) according to the female respondents. However, in Parwan, 32.8% of women say poverty while 40.2% of women say illiteracy. In Laghman, only 5.3% say poverty while 22% say insecurity. Laghman is also the province where most women state a Taliban presence is a problem (9.6%) followed by Nangarhar (6.4%). Lack of healthcare (12.9%), lack of adequate educational opportunities (8.1%), and lack of women's rights (9.1%) are also the strongest in Laghman compared to the other provinces.

*Women were asked who can best help them increase income and reduce poverty.*

*Laghman: Community elders (52.4%), Local shura (19.5%), family (19.5%)*

*Parwan: Family (42.6%), community elders (24.3%), government (13%)*

*Wardak: Family (36.7%), government (31.6%), NGOs (18.1%)*

*Ghazni: Family (73.6%), Don't know (10.2%), Community elders (5.3%)*

*Nangarhar: Community elders (28.9%), Government (27.5%), NGOs (19.5%)*

According to the female respondents, women participate in a wide range of income earning activities but most of the tasks were located in the home compound. Sewing is the most common non-agricultural income activity for women among the respondent households with an average of 37.9% of households having a female member engaged in this activity. Nangarhar shows the highest number of households at 67.7% followed by Laghman at 45.9%. Embroidery is the least common in Parwan (13% of households) and Ghazni (13.1%). In Nangarhar however, the number of households was the highest with 40.1% reporting having a female household member generating income through embroidery. This was followed by Laghman at 34.4%. The largest percentage of women participating in the processing of dried fruit can be found in Laghman (29.2% of women) followed by Parwan (17% of women) and Wardak (16.5% of women). For further detail on this data, please see Tables 36 and 41 in Appendix H.

Weaving carpets is uncommon across the provinces but the most common in Wardak (12.7% of women) followed by Nangarhar (8.7% of women). The numbers then drastically fall in the other provinces. Spinning wool is very rare except for in Ghazni where 28.9% of women participate.

Within the household, rearing and selling of poultry was above 50% only in Laghman (56.7% of women) and the least common in Parwan (20.4% of women). This is somewhat at odds with the male respondents of which 73% state that the women dealt with poultry (see table 8 below on household task distribution). However, at the *mantqa* level, the female replies are more in line with the male respondents, showing 84.3% of women in Laghman earning income through poultry, 58% in Nangarhar, and 53.3% in Wardak with Ghazni (48%) and Parwan (44.8%) trailing.

Rearing and selling of livestock was again the most common in Laghman (68.6%) but the second most common in Parwan (39.1%). Bee-keeping and processing of dried fruits was less than 5% in all provinces. Cultivation of saplings was less than 2% in all provinces as was the cultivation and selling of flowers.

| <b>TABLE 8: HOUSEHOLD TASK DISTRIBUTION</b> |                       |                         |                         |                    |              |            |
|---|-----------------------|-------------------------|-------------------------|--------------------|--------------|------------|
| <b>PERCENTAGES, MALE AND FEMALE</b>         |                       |                         |                         |                    |              |            |
| <b>Task</b>                                 | <b>Male HH Member</b> | <b>Female HH Member</b> | <b>Shared M &amp; F</b> | <b>Hired Labor</b> | <b>Other</b> | <b>N/A</b> |
| Plowing                                     | 95.5                  | 0.4                     | 0.8                     | 2.7                |              | 0.4        |
| Hoeing                                      | 94.9                  | 0.9                     | 1.0                     | 2.9                |              | 0.3        |
| Planting                                    | 96.0                  | 0.7                     | 1.3                     | 1.4                |              | 0.4        |
| Weeding                                     | 69.3                  | 5.7                     | 20.5                    | 2.2                | 0.5          | 1.3        |
| Fertilizer/Pesticides                       | 94.1                  | 0.7                     | 2.1                     | 2.6                | 0.1          | 0.3        |
| Irrigation                                  | 93.6                  | 0.8                     | 2.9                     | 1.5                | 0.1          | 0.4        |
| Harvesting Main Crop                        | 84.3                  | 1.3                     | 9.9                     | 3.4                | 0.3          | 0.6        |
| Harvesting Residue/Byproduct                | 76.0                  | 3.1                     | 16                      | 2.7                | 0.1          | 1.5        |
| Transporting Harvest Home                   | 88.2                  | 1.5                     | 6.3                     | 3.1                | 0.3          | 0.5        |
| Threshing/Shelling                          | 84.4                  | 1.0                     | 5.5                     | 5.9                | 0.5          | 2.4        |
| Cleaning/Sorting                            | 61.0                  | 11.8                    | 22.3                    | 2.4                | 0.2          | 1.6        |
| Marketing (e.g., selling, negotiating)      | 88.3                  | 0.9                     | 3.8                     | 2.1                | 0.1          | 4.4        |
| Pruning/Waxing                              | 71.3                  | 1.4                     | 3.9                     | 3.3                | 0.1          | 20         |
| Harvesting Fruit                            | 56.8                  | 2.7                     | 16.7                    | 1.8                | 0.1          | 21         |
| Packing Fruit                               | 55.6                  | 3.5                     | 16.0                    | 2.4                | 0.1          | 22         |
| Poultry Care                                | 7.5                   | 73.4                    | 6.0                     | 0.4                | 0.1          | 12         |
| Cleaning Stables                            | 6.3                   | 77.7                    | 7.8                     | 1.3                | 0.1          | 6.5        |
| Milking                                     | 4.5                   | 83.5                    | 3.0                     | 0.7                | 0.1          | 7.4        |
| Cleaning Livestock                          | 12.7                  | 64.2                    | 13.8                    | 2.4                | 0.1          | 6.4        |
| Grazing Livestock                           | 57.7                  | 17.4                    | 9.3                     | 4.6                | 2.3          | 8.0        |
| Byproduct Prep (e.g., milk, eggs)           | 12.9                  | 71.5                    | 5.0                     | 0.6                | 0.3          | 9.0        |
| Decisions on Selling Livestock              | 48.8                  | 11.5                    | 30.2                    | 0.7                | 0.1          | 8.5        |
| Decisions on Selling Livestock Byproducts   | 36.5                  | 30.1                    | 19.6                    | 1.8                | 0.3          | 12.0       |
| Transporting Livestock for Sale             | 82.2                  | 3.0                     | 2.6                     | 2.0                | 0.1          | 9.8        |

Only in Laghman did women report working outside the home in any numbers (42.6%). This was followed by Nangarhar (8.1%) and Ghazni (6.1%). Notably, in Wardak (11.8%) and Ghazni (12.8%) more women refused to answer than in other areas. Processing and selling of milk products is the most common in Laghman (72.9%) and Wardak (59.6%) but more than 33% do so also in the other provinces.

In both Laghman (85.2%) and Parwan (73.2%) a majority of the women keep the money they earned themselves while in Wardak (48.2%) and Nangarhar (48.9%) just under half do. The lowest percentage is in Ghazni where only 30.1% keep the money. Interestingly, Laghman also has a high percentage of joint decisions on how to spend the money with 67.6%. In Parwan, women decide themselves in 41.6% of cases, the male head 30.2%, and jointly 26.2%. In Wardak it is mainly the male head who decides (63.3%), as is the case in Nangarhar (52.9%), and Ghazni (43.2%).



A substantial gap can be seen in terms of women's participation in business activities. According to the female respondents, less than 4% of women in their mantaqa earn money through business activities. While Nangarhar (3.7%), Ghazni (3.6%), and Laghman (3.3%) all reach above 3%, Parwan only shows 2.6% earning through business. Wardak is trailing severely in last place with 0.8% of women earning money this way. However, it should be noted that the cultivation and selling of agricultural produce is claimed by 29% of women in Laghman and 22.2% in Parwan but by under 7% in the other provinces. Surprisingly large percentages of women have participated in a marketing course. This is most common in Laghman (55.7%) followed by Nangarhar (25.6%), and Parwan (16.2%).

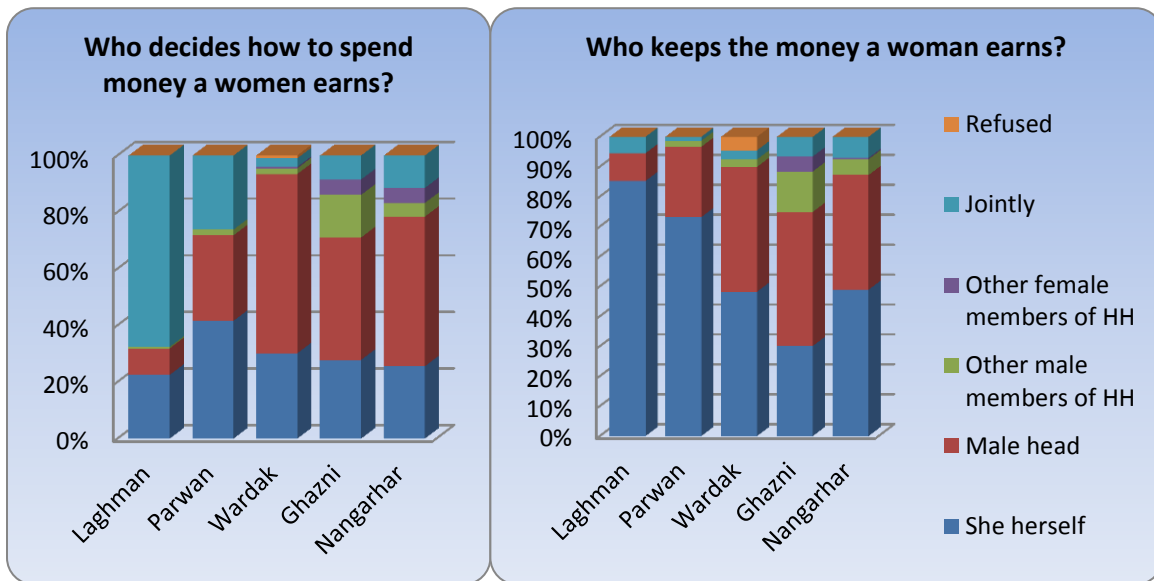


Figure 7: Household monetary decisions

## Farming Household Assets

Comparatively, simpler tools such as axes, sickles, and spades are the most common assets across the five provinces. Wheelbarrows are also fairly common. However, animal-pulled carts, hoes, and harrows are less readily available. Less than 50% of households in all provinces have a plow and only in Laghman do more than half of the respondents own an ox yoke. Less than 4% of households own heavy machinery, such as a tractor, in all provinces except Ghazni where 19.1% claimed to own one. This is a somewhat surprising number and should be further investigated before drawing any conclusions from it. However, while less than 3% reported having a threshing machine in the rest of the provinces, 11.8% in Ghazni claimed household ownership of one. Electric and water mills are rare and only in Wardak (17.5%) do hand mills appear to have a wider presence. Hand-operated water pumps are also quite uncommon with a third of respondents owning one.

Women in Laghman (64.8%) and Parwan (50.3%) are more inclined to feel they have adequate processing equipment than is the case in the other provinces. Especially Wardak (1.5%) and Ghazni (1.2%) did not agree that the equipment they had access to was sufficient. Some 70.8% of households also report owning a sewing machine

On average, 25% of respondents claimed to own a backpack sprayer and Ghazni again stand out in terms of water pumps with 31.5% reported having one compared to the second largest percentage in Nangarhar (10.3%). Also fuel-operated generators are available to an average of 23.7% of the households and, with the exception of Parwan, more than half of respondents in all provinces owns at least one solar panel. Electric stoves are significantly less common than gas stoves. While only 45.7% of households reported not owning a gas stove, 92.5% did not have an electric stove. Refrigerators are uncommon with just 3.7% reported owning one or more.

### **Radios are substantially more common than TV sets**

Radios are substantially more common than televisions, with the former owned by an average of 58.2% and the latter by 30.9%. Mobile phones are also common with just 25% stating they did not have one within the household. Unsurprisingly, landline phones are very uncommon though 24.3% of households in Nangarhar and 21.2% in Ghazni reported having a landline in the household. In Ghazni and Wardak, 12.1% of households claimed to own a satellite television in the household. Computer equipment is also uncommon among farm households with an average of 6.1% reporting ownership of a desk-top and 9.9% a laptop. Information dissemination efforts should consequently focus on the radio as a means of reaching the maximum number of community members.

### **Motorcycles remain important modes of transportation for rural populations**

When it comes to personal transportation, motorcycles are by far more common than cars. On average, 62.8% of respondents reported owning a motorcycle compared to 14.7% owning a car. Motorcycles are the most common in Laghman and Nangarhar while cars, narrowly, are the most common in Wardak and Nangarhar. The importance of the motorcycle for rural populations cannot be overstated. Apart from a cheaper initial cost, the upkeep, fuel, and other associated costs are substantially lower.

With often very poor infrastructure and road conditions, a motorcycle is the only viable option. Attempts by the Afghan government to limit the movement of insurgents by motorcycle in the Eastern Region have also led to forced school closures as local interest groups have tried to get the ban lifted. In addition, any hope of quick transportation of casualties, sick people, midwives, or other health service-related issues, is dependent on the motorcycle in many rural communities. It is a potentially powerful leverage tool in many ways, but as attempted bans have shown, one that will not necessarily be acceptable or produce the intended result.

## **Views of the Government's Agricultural Policies and Support**

Generally, all respondents in the farmer focus groups expressed dissatisfaction with the government in the agriculture sector. However, there were some positive views in relation to other aspects of government interaction. The national solidarity program for example gained praise in Laghman, as did the perceived level of security which was also a positive for one focus group in Parwan, but not the other. In Wardak by contrast, the farmers instead attributed insecurity to the government which they feel is targeting innocent people. However, the Wardak respondents, like several other focus groups, are pleased with the provision of schools. In Ghazni, the respondents reported that the Taliban have tried to force the schools to close but after elder intervention, they have been allowed to remain open.

All respondents in the farmer focus groups reported inactivity and disapproval of MAIL and the DAIL. In Laghman, respondents reported that some cattle have been distributed but that they have all been sick and died. In Nangarhar, one focus group reported that they had been allowed to buy plants at half price and the other focus group reported that the department provided some training on okra and vegetables to a limited number of people. In Parwan, one individual reported having taken disease samples to the DAIL but received no advice or help.

In addition to this, very few farmer focus group respondents reported knowledge of any additional agricultural projects implemented in the area. However, in Laghman two individuals reported seed distribution and one individual in Ghazni participated in a livestock training course that he found useful. This was also reported by a single respondent in Wardak where a majority of respondents instead stated that extension services were distributed to family and friends by the Malik. In Parwan, respondents reported knowledge of one veterinary center in the province but claimed it had done nothing for them.

More concerning is that several focus groups gave the view that any help is monopolized locally and only distributed through specific power-holders, benefitting their support network, a theme that was especially strong in the first Wardak FGD. However, the focus groups in Laghman and Parwan, all reported this pattern of power abuse while one group in Nangarhar reported that irrigation water had been diverted and a fee had been demanded to access it.

The diversion of aid and development resources to specific groups in a community is an issue that has also been documented in academic studies. At least two studies on aid and development impact in Afghanistan found similar response patterns in provinces across the country, and in various districts. While some of this may be attributable to other motives, the descriptions of how development and aid funds are diverted, misappropriated, and openly taken by local power-holders to increase their personal wealth and power are not only similar. They are also corroborated by some of these power-holders. In terms of agricultural development, engagement structures that do not put the resources directly into the hands of the farmers will be susceptible to diversion and theft, thus threatening the entire outcome of a project by placing needed resources out of reach of the farmers that need them, and into the markets to enrich individuals instead.

In total, 78% (1055 of 1338) of respondents said there were no agriculture or livestock related projects in their area in the preceding year. Knowledge of agriculture projects is rare apart from Laghman, where 84% of the households reported knowledge of an agriculture project in their area. In the rest of the sample, less than 9% of respondents (99 of 1129 outside Laghman) know of a project.

# FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

## Baseline Value for Household Income in the Eastern Region

The crops providing the most income are vegetables and fruit. However, they are dwarfed by the non-agriculture salaried income – largely a result of current but waning aid flows into the communities.

The mean number was reached by adding the reported total income from ten different sources (see Table 9 below) and dividing it by the number of surveyed households. This mean number is considered to best represent the local economy as a whole in the Eastern Region.

| TABLE 9: BASELINE VALUE FOR HOUSEHOLD INCOME                 |                       |                     |                                |
|--|-----------------------|---------------------|--------------------------------|
| Household Income of 1360 HHs surveyed in the Eastern Region. |                       |                     |                                |
| Income source  | AFN                   | USD                 | Percentage Breakdown by Income |
| <i>Cereal</i>  | 7,269,825             | 130,447.25          | 4.75                           |
| <i>Vegetables</i>  | 13,453,965            | 241,413.33          | 8.80                           |
| <i>Forage crops</i>  | 2,142,952             | 38,452.40           | 1.40                           |
| <i>Industrial/oil seed</i>                                   | 1,161,037             | 20,833.25           | 0.76                           |
| <i>Legume</i>  | 3,039,538             | 54,540.43           | 1.99                           |
| <i>Fruit</i>   | 18,269,665            | 327,824.60          | 11.94                          |
| <i>Livestock</i>   | 3,300,090             | 59,215.68           | 2.16                           |
| <i>By-products</i>   | 2,422,707             | 43,472.22           | 1.58                           |
| <i>Fish</i>  | 28,000                | 502.42              | 0.02                           |
| <i>Salaries</i>  | 101,875,250           | 1,828,014.55        | 66.60                          |
| <b>TOTAL HH REVENUE</b>                                      | <b>152,963,029</b>    | <b>2,744,716.13</b> | <b>100</b>                     |
| <b>Mean annual income 1360 HHs</b>                           | <b>AFN 112,472.82</b> | <b>US\$2,018.17</b> |                                |

By sub-dividing the income into ten sources, shifts in the economy can more easily be monitored. This will become especially important as salary incomes can be expected to drop significantly in the coming years compared to the reporting year (1391/2012-2013). The sub-division will also allow USAID to monitor annual fluctuations from adverse climate events to measure what production is affected the most. By comparing similar natural hazard events over time, and their relative impact on the different income sources, a picture can also be constructed of the resilience of each income source in relation to specific types of events.

## Baseline Value for Production of Licit Crops in the Eastern Region in Metric Tons per Hectare

For ease of comparison and consistency across indicators, a similar sub-division of crops has been made to measure the production of licit crops in the Eastern Region. The rationale for a sub-division of crop types is the same as previously. It makes it easier to compare across but also within the overarching umbrella of mean production in metric tons per hectare (mt/ha). The mean values have been reached by adding all reported yield (mt) of each crop group and dividing it by the sum of all reported metric ton yields in that same category.

| <b>TABLE 10: BASELINE VALUE FOR PRODUCTION OF LICIT CROPS IN THE EASTERN REGION</b> |                            |
|---|----------------------------|
| in metric tons per hectare  |                            |
| <b>Crop</b>   | <b>Eastern Region mean</b> |
| <i>Cereal</i>   | 4.17 mt/ha                 |
| <i>Vegetables</i>   | 5.75 mt/ha                 |
| <i>Forage crops</i>   | 0.49 mt/ha                 |
| <i>Industrial/oil seed</i>  | 2.5 mt/ha                  |
| <i>Legume</i>   | 0.8 mt/ha                  |
| <i>Fruit</i>  | 0.8 mt/ha                  |

## Baseline Value for Irrigated Hectares in the Eastern Region

The baseline value for irrigated hectares reflects both improved and traditional irrigation methods. An improved irrigation structure is one in which cement, concrete, stone masonry and metal is used. Irrigation structure made up mostly of mud channels is considered traditional in this report. A total of 270 households (out of 1360) reported having access to improved irrigation totaling 1193.6 jeribs or 238.72ha. Divided by the total number of households, the mean improved irrigated area per household is 0.18 ha. By comparison, the mean irrigated area (by any means) is 1.4ha.

Given that a lack of water and reliable irrigation is one of the core problems, the most meaningful value to measure is whether an increase occurs across all households, not just existing users.

While this by necessity will make any changes small and thus harder to accurately assess, this should be less of a problem over time. The subsistence nature of agriculture in the Eastern Region means that a lack of water is a constraint across the region. Production is

| <b>TABLE 11: BASELINE VALUE FOR IRRIGATED HECTARES IN THE EASTERN REGION</b> |                           |                                  |                                    |
|--|---------------------------|----------------------------------|------------------------------------|
| Irrigation by hectare  |                           |                                  |                                    |
|  | <b>Total irrigated ha</b> | <b>Total improved irrigation</b> | <b>Percent improved irrigation</b> |
| Hectares   | 1934,02 ha                | 238.7ha                          | 12.30%                             |
| <b>East Region mean for 1360 HH</b>  | <b>1.4 ha</b>             | <b>0.18 ha</b>                   |                                    |

predominantly for the household's own use and a lack of water and irrigation thus has an impact across the region. As salaried income can be expected to drop drastically in the near future, dramatically reducing the purchasing power of rural households, long-term sustainability will be tied to domestic yields. Without irrigation, these yields will continue to suffer and be susceptible to variations in weather with potentially catastrophic results.

## Baseline Value for Hectares Under Licit Crop Cultivation in the Eastern Region

| <b>TABLE 12: BASELINE VALUE FOR HECTARES UNDER LICIT CROP CULTIVATION IN THE EASTERN REGION</b> |                |
|---|----------------|
|   | <b>Total</b>   |
| <b>Physical area</b>  | <b>2591.4</b>  |
| <i>HH used for mean</i>   | 1360           |
| <b>Aggregate hectares</b>   | <b>5114.24</b> |
| <b>HH used for mean</b>   | <b>1326</b>    |
| <b>Aggregate mean</b>   | 3.85ha         |
| <b>Physical mean</b>  | 1.9ha          |

Most farmers (84.1%) in the Eastern Region, and indeed in Afghanistan, are small land-holders. The households targeted in this survey are all agricultural households and thus contribute to the overall area under cultivation. As can be seen in table 13, the physical mean area is 1.9 hectares per household. However, the land is more intensively used in some areas. Given the common complaint of a lack of fertilizers, this seems likely to become a problem with repeated cultivation cycles.

This baseline value is presented as two values. The first is the mean value for physical land and thus represents the land available for usage in hectares. The second value is aggregate hectares. Because of multiple crop rotations through the year, the same land is used multiple times. For production purposes however, the physical land is available multiple times in a year.

## CONCLUSIONS

Cereal crops are key to agricultural households in the Eastern Region as they are grown for food rather than the market. Vegetables and fruits have a more prominent role in local trade according to the farmer FGDs. This assertion is supported by the survey data which indicates that grapes, cabbage, onion, and eggplant, are sold relatively often. However, agricultural households are largely dependent on salaried income from several household members – a situation that could produce extremely negative results when the international presence reduces.

While access to irrigation is relatively good, reliance on surface water such as rivers is high as is vulnerability to natural hazards and to climate factors such as insufficient rainfall. In fact, water shortage is the greatest challenge farmers in the area face. There is much diversity in terms of crops but some stand out as more commonly cultivated and in larger volumes, thus making them more relevant to measure change over time. Those crops and the conditions for agricultural households have been used to establish the above baseline values and to add additional monitoring factors of interest to measure impact and, in the longer term, change (see recommendations below).

Using the baseline values for irrigated land and land with improved irrigation, USAID will also be able to monitor the expansion of improvements against population reporting. Given the concerns raised over lack of irrigation, higher levels of water retention in the system and less waste is likely to be one of the most effective ways of improving sustainability, resilience, and yields.

The agricultural economy in the Eastern Region is predominantly a subsistence economy with production mainly aimed at domestic use. This is especially reflected in the fact that non-agricultural income is by far the highest in the surveyed areas and in the farmer FGDs where the respondents state that they sell only if they have any produce left over.

There is a diverse range of crops present in the region though with some variations between provinces. The milder of Nangarhar create a different environment from Wardak and Panjshir, where temperatures can fall below zero. The more profitable crops are fruit and vegetables while the other crops (and much of also fruit and vegetables) are cultivated for domestic consumption.

A lack of extension services and adequate markets are described as problems in terms of being able to market produce. However, more crucially, lack of fertilizers, improved seeds, veterinary services, pesticides, etc. hamper efforts to increase yields.

Most respondents claimed to not have received any extension services in the last 12 months. This applies also in project areas which would primarily suggest that resources and effort being put into the area are insufficient to have an impact; or that the respondents are collectively trying to mislead; or that services are somehow intercepted or interrupted before they reach the intended recipients.

Several respondents describe similar issues with local diversion by power-holders where services and aid are locally directed only to specific groups. It is in the interest of USG to follow up on such perceptions and to try to ensure a wider spread of services and aid.

A strong gender-divide is present in production with women mainly undertaking production activities within the household. This is the result of long established social attitudes.

## **RECOMMENDATIONS**

USG efforts in agricultural assistance in Afghanistan exist as a complex set of programs, with linkages both direct and subtle. USG efforts are part of a broad program of international assistance for agriculture in Afghanistan. Linkages exist not only among USAID-funded projects, but among projects supported by other USG agencies and other international donors. All of these projects, by clearly articulated policy, are aligned with and support development strategies of GIRoA.

The USG provides direct support for MAIL and DAIL extension programs that work directly with farmers, and the USG also supports programs that work directly with farmers and their families. Interviews with staff of implementing partners revealed a commitment to, and no significant problems in, coordination. The substance of coordination, though, was almost exclusively jointly attending meetings with local officials. From the perspective of local farmers, project coordination lacks operational meaning. Virtually no farmers, whether survey

respondents or in FGDs, have contact with agricultural assistance projects, and rarely were aware of the existence of projects.

### ***Domestic production***

Domestic production is a way of measuring women's contributions to the agriculture household economy and identifying suitable program measures to support women specifically. Social structures and expectations force much of the rural female population to engage with production and tasks centered on the home. In the Eastern Region, this social preference is very strong and female participation is extremely limited outside the home. Substantial change to this relationship is unlikely in the near future. However, USAID can identify, monitor, and support production generated by women in the home in order to increase their socio-economic status. This also aligns with the USG agricultural assistance strategy goal of increasing agricultural sector jobs and incomes, while also pursuing a gender-sensitive approach.

### ***Local Awareness of Programming***

The lack of awareness of available projects and services is a major obstacle to the impact such projects can achieve. Awareness of available services needs to be raised further as low awareness is a major issue in terms of credit, services, and projects. For example, credit providers pointed to low awareness of their services as one of the obstacles they are facing. Given that opium traders very proactively issue credit, farmers working to subsistence levels may not need much of an economic set-back before turning to the instant (though limited and essentially a debt trap) money offered in the poppy trade. Alternative crops with similar or better revenue prospects should be more proactively promoted, together with a comprehensive package of credit, extension services, and input, especially in terms of training.

Close coordination at the DAIL level would give local farmers a point of contact to raise problems or discuss issues, and it would also establish a point of responsibility to which USAID can bring performance questions raised by the baseline surveys. Adding awareness as a baseline value will assist in measuring the progress of this work and whether it reaches end recipients or is diverted along the way through, for example, corruption. The study found that radios are present in many homes, thus making this the most effective channel to disseminate information.

### ***Local Perceptions of Government Intervention***

Corruption is a core problem in Afghanistan and the almost unanimous perceived lack of government help and intervention is therefore of concern. While this may have multiple causes, the issues facing implementation in terms of capacity, diversion, and corruption, is problematic in relation to perceived non-delivery. With the coming reduction in international presence and aid flows, many rural Afghan households may lose a large part of their income. Government intervention is designed and intended to help increase the agriculture stability and sustainability but appears to fall short of this in the Eastern Region. It is impossible to determine the cause of the perceived lack of support without closer examination and it is strongly recommended that USAID examine and compare declared output with local perceptions of assistance in order to mitigate the risk of assistance being monopolized and diverted at various levels.

### ***Control Group Baselines***

It is worth mentioning the necessity of control group baselines in future studies. Measuring change against areas not targeted for programming is the most efficient way of understanding fluctuations, changes, and needs compared over time; a relatively simple way of understanding impact rather than merely output over time. If change only happens in a project area and not in other areas, the likelihood of it being connected to programming increases. If a decline or



increase happens across all area types, it is likely connected to something else. Such baseline values would offer a chance to understand when and where programming works, and when and where it would need adjustment. In the context of Afghanistan, substantial issues with diversion, lacking capacity, and corruption, often impact aid and development activities negatively. Comparative values between project and non-project areas, or even government-controlled and non-government controlled areas, would also provide warning when programming was not reaching the intended beneficiaries and achieving the intended outcomes.

## **FEASIBILITY OF STUDY REPLICATION**

The SOW asked for consideration of whether the study could be “replicated in other regions, or incorporated into a stand-alone program for third-party monitoring within the Office of Agriculture that will regularly and systematically assess” OAG contributions to increased agricultural jobs and incomes and increased confidence of Afghans in their government.

Replication of the baseline pilot to provide baseline and progress monitoring across Afghanistan does not, in principle, present novel problems. Several organizations, collectively, conduct a broad range of information-gathering activities across the country. While the problems are not novel, neither are they trivial. Security conditions limit information gathering in some areas, and preclude it completely in others. As with any survey, and perhaps even more than with surveys of more secure and less isolated populations, the amount of detail sought should be balanced against the difficulties of finding survey respondents willing to participate in lengthy interviews.

Information on standard topics such as production, land cultivation and irrigation methods can be acquired with typical interviews. Increasing the level of detail, with respect to individual crops, changes in cropping patterns and cultivation techniques, necessarily lengthens the interview and calls for information that may not be as readily available. When deciding to include questions, it should be kept in mind that the willingness to participate in a shorter survey is likely to be substantially higher than in a very long and complex session.

Measuring agricultural income subsistence and semi-subsistence farmers is conceptually more difficult than measuring income for households fully engaged in market activities. Changes in the portion of production that is sold would be a useful indicator of both increasing productivity and improved market infrastructure (social and physical). Year-to-year fluctuations in growing conditions would present challenges in interpreting annual changes, but the effort would yield useful information more quickly than waiting years for a trend to be more obvious.

The draft Survey Instrument (SI) prepared for field testing attempted to capture what turned out to be more information than available. In the field test, detail on production costs (disaggregated for specific inputs such as seed, fertilizer and labor and by crop) and production detail (such as inter-cropping) contributed to excessive length and difficulty of recall. The revised SI is probably near the limit, in detail and length, of what can be gathered in a voluntary survey.

## ENDNOTES

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- xxiii Mansfield, 2011, Between a rock and a hard place, Available at <http://www.areu.org.af/Uploads/EditionPdfs/1128E-Between%20a%20Rock%20and%20a%20Hard%20Place-CS-2011.pdf> [Accessed on 25 September 2013]
- xxiv The exact question (in English) was “The following table lists various products and by-products that are obtained from livestock. For the year 1391, please tell me what type and quantity of by-products your household produced; what types were sold, at what quantity and at what price.”
- xxv The total number of sources of income, 648, is higher than the total number of households with non-farm income, 551, because some households have more than one source of non-farm income.
- xxvi Grace and Pain, 2004, Rethinking rural livelihoods in Afghanistan, Available at <http://www.areu.org.af/Uploads/EditionPdfs/424E-Rethinking%20Rural%20Livelihoods%20SP.pdf> [Accessed on 19 September 2013]
- xxvii See also <http://www.acdivoca.org/site/ID/AfghanistanACE/>
- xxviii See also [http://www.acdivoca.org/site/Lookup/ACE-ANNUAL-REPORT-FY2012\\_web/\\$file/ACE-ANNUAL-REPORT-FY2012\\_web.pdf](http://www.acdivoca.org/site/Lookup/ACE-ANNUAL-REPORT-FY2012_web/$file/ACE-ANNUAL-REPORT-FY2012_web.pdf)
- xxix For example the credit provider interviewed in Laghman for this project.
- xxx No particular explanation was provided for this rule.